**WHAT IS CLAIMED IS:**

1. Vacuum treatment chamber for work pieces with at least one induction coil that generates a treatment plasma, at least in part, inside a discharge chamber located inside the coil, and with a slotted screen that is coaxially arranged in relation to the axis of the coil between the discharge chamber and the coil, and the slots of the screen slots have a parallel direction component in relation to the axis of the coil wherein the screen comprises a self-contained body,

the slots are located along at least the major part of the circumference of the body with a slot density per circumference-length unit of S, where S is number of slots per cm and $S \geq 0.5$.

2. The vacuum treatment chamber of claim 1, wherein $S \geq 1$.

3. The vacuum treatment chamber of claim 1, wherein the slots have a width d, wherein $d \leq 2$ mm.

4. The vacuum treatment chamber of claim 1, wherein the screen comprises metal and is connected with an electrical reference potential.

5. The vacuum treatment chamber of claim 2, wherein the slots, viewed from above and in an axial direction, are offset ($\varphi$) in relation to the radial direction (r).

6. The vacuum treatment chamber of claim 1, wherein the chamber comprises a coaxial wall comprising a dielectric material, wherein the screen is arranged inside the wall, and wherein the coil is capable of being arranged inside or outside of the wall.

7. The vacuum treatment chamber of claim 1, wherein at least one pair of electrodes, arranged at a distance from each other, are inside the chamber and the electrodes are connected with a source selected from the group consisting of a DC-source, an AC-source, an AC+DC-source, a pulsed DC-source, or an HF- or an DC-source,

wherein the operation plasma for the tool treatment is excited inductively by the coil and capacitively by the electrodes.

8. The vacuum treatment chamber of claim 1, wherein a measuring apparatus is envisioned for the plasma density, preferably in the form of a voltage measuring apparatus on an electrode inside the chamber, preferably on the tool support electrode or the target electrode whose exit signal is fed as a measured ACTUAL value to a control circuit, and the latter functions upon a generator for the coil as an final control element for the plasma density.

9. Use of the chamber as claimed in claim 1 for the work piece treatment during which process electrically conductive material is released into the chamber.

10. Use as claimed in claim 9 for sputter-etching of electrically conductive work piece surfaces or for sputter-coating of work pieces with electrically conductive layers.

11. Method for the surface treatment of work pieces using a plasma that is generated inside a vacuum chamber which is inductively generated, at least in part, by way of a coil apparatus, and with this method electrically conductive material particles are released in the plasma wherein the plasma is directly surrounded by a preferably metallic screen, featuring the slots that are directed axially at least in one direction component in relation to the axis of the coil and wherein the slots density is envisioned with a density per circumference length unit of the screen S (number of slots per cm) for which applies: $0.5 \leq S$.

12. The vacuum treatment chamber of claim 1, wherein the screen inside the chamber separates an outer chamber from the discharge chamber and a gas line apparatus leads into the outside area.

add A2 add B3